

Appendix B – Pending Claims

Serial No. 09/698,009

1. A laminating device for providing a reinforced region of material supply web, comprising:

- a primary feeding mechanism cooperating with a primary supply web for advancing a predetermined length of the primary supply web;
- a secondary feeding mechanism for advancing a selectable predetermined length of secondary web;
- a cross web shearing apparatus positioned downstream from the secondary feeding mechanism for receiving the predetermined length of the secondary web, the cross web shearing apparatus including a shear blade positioned substantially perpendicular to the secondary material web and movable through a cutting motion to cause a reinforcing strip to be sheared from the secondary web;
- a handling drive positioned adjacent the shearing apparatus for receiving the reinforcing strip from the shearing apparatus and moving the reinforcing strip to a sealing location adjacent the primary supply web; and
- a laminating device located proximate to the handling drive for sealing the reinforcing strip to the primary supply web.

2. The laminating device of claim 1 wherein the cross web shearing apparatus further comprises a support blade positioned substantially perpendicular to the shear blade and in a cutting relationship therewith such that the shear blade and the support blade cause the shearing of the reinforcing strip.

3. The laminating device of claim 1 wherein the primary feeding mechanism is a driven primary feed roller controlled to feed the predetermined amount of the primary web.

4. The laminating device of claim 1 wherein the secondary feeding mechanism is a driven secondary feed roller controlled to feed the predetermined amount of the secondary web.

7. The laminating device of claim 1 wherein the handling drive is a vacuum applicator manifold using a vacuum signal to hold the reinforcing strip.
8. The laminating device of claim 1 wherein the handling drive comprises a plurality of applicator manifolds each using a vacuum signal to hold the reinforcing strip.
9. The laminating device of claim 8 wherein the plurality of applicator manifolds are attached to a rotation block, wherein the rotation block is rotatable about a central axis to appropriately position the plurality of applicator manifolds.
10. The laminating device of claim 1 further comprising a holding clamp positioned adjacent the cross web shear and the handling drive, such that the holding clamp will hold the secondary web against the handling drive prior to shearing the reinforcing strip.
11. The laminating device of claim 10 wherein the holding clamp includes a holding tab movable between a feeding position and a holding position, wherein the holding tab allows the secondary web to be fed between the holding clamp and the handling drive when the holding tab is in the feeding position while the holding tab holds the secondary web against the holding mechanism when the holding tab is in the holding position.
12. The laminating device of claim 1 wherein a cutting edge of the shear blade is curved and the cutting motion is a rocking motion.
13. The laminating device of claim 12 wherein the shear blade includes a plurality of cam tracks that cooperate with plurality of the cam followers to cause the rocking motion.
14. The laminating device of claim 13 wherein at least one of the cam followers are attached to a cam follower framework, wherein movement of the cam follower framework generates the cutting motion.

15. The laminating device of claim 14 wherein the cam follower framework is moved along a substantially linear path.

16. The laminating device of claim 2 wherein the shear blade includes a plurality of cam tracks that cooperate with plurality of the cam followers to cause the cutting motion to be a rocking motion, and wherein the plurality of cam followers includes a cam pin attached to the blade and cooperating with a cam track attached to the support blade to create the rocking motion.

17. The laminating device of claim 16 wherein the shear blade includes a plurality of cam tracks that cooperate with a plurality of cam followers which attached to a cam follower framework, wherein movement of the cam follower framework generates the cutting motion.

18. The laminating device of claim 17 wherein a cam framework actuator causes movement of the cam follower framework resulting in the rocking motion of the shear blade.

19. The laminating device of claim 2 wherein the shear blade extends only a predetermined distance below the support blade at any time.

34. An apparatus for producing a supply of material in a web format having reinforcements in predetermined locations, comprising:

- a primary supply feed roller coupled to a primary web to move the primary web in a predetermined manner;

- a secondary supply feed roller coupled to a secondary web to move the secondary web in a selectable predetermined manner;

- a cross web shear device having a shear blade and a support blade, the cross web shear device positioned to receive the secondary supply web at a cutting position between the shear blade and the support blade, the cross web shear further having a blade actuator for moving the shear blade through a cutting motion after the secondary supply web has been positioned at the cutting position resulting in a reinforcing strip to be sheared from the secondary web;

a movable applicator having an applicator manifold positionable in a cutting position adjacent the cross web shear such that the secondary web extends adjacent a holding surface of the applicator manifold when the secondary web is in the cutting position, the applicator manifold having a plurality of vacuum apertures in the holding surface to create a vacuum seal between the secondary web and the holding surface when the secondary web is in the cutting position, the movable applicator movable between cutting position and a delivery position allowing movement of the reinforcing strip to an attachment location; and
an attachment device positioned adjacent the primary web and adjacent the applicator delivery position, wherein the reinforcing strip can be attached to the primary web at a reinforcing location by the attachment device cooperating with the applicator.

35. The apparatus of claim 34 wherein the attachment device is a laminating device having a heating element to attach the reinforcing strip via a heat seal.

36. The apparatus of claim 34 wherein the cutting motion is a rocking motion.

37. The apparatus of claim 36 wherein the rocking motion is created by a plurality of cam tracks in the shear blade and a plurality of cam pins coupled to the blade actuator.

38. The laminating device of claim 2 wherein the shear blade extends only a predetermined distance towards the handling drive such that the shear blade does not extend into the path of motion of the handling drive.

39. The laminating device of claim 13 wherein the plurality of cam tracks and the plurality of cam followers control the rocking motion such that the shear blade does not extend into the path of motion of the handling drive.

40. The laminating device of claim 16 wherein the plurality of cam tracks and the plurality of cam followers control the rocking motion such that the shear blade extends only a predetermined distance past the support blade.

41. The laminating device of claim 37 wherein the plurality of cam tracks and the plurality of cam pins control the rocking motion such that the shear blade does not extend into the path of motion of the movable applicator.

42. The laminating device of claim 37 wherein the plurality of cam tracks and the plurality of cam pins control the rocking motion such that the shear blade extends only a predetermined distance past the support blade.

43. A laminating device for providing a reinforced region of material supply web, comprising:

- a primary feeding mechanism cooperating with a primary supply web for advancing a predetermined length of the primary supply web;

- a secondary feeding mechanism for advancing a selectable predetermined length of secondary web;

- a cross web shearing apparatus positioned downstream from the secondary feeding mechanism for receiving the predetermined length of the secondary web, the cross web shearing apparatus including a shear blade positioned substantially perpendicular to the secondary material web and movable through a cutting motion to cause a reinforcing strip to be sheared from the secondary web; and

- a laminating device located downstream from the primary supply web for sealing the reinforcing strip to the primary supply web.

44. The laminating device of claim 43 wherein the cross web shearing apparatus further comprises a support blade positioned substantially perpendicular to the shear blade and in a cutting relationship therewith such that the shear blade and the support blade cause the shearing of the reinforcing strip.

45. The laminating device of claim 43 wherein the shear blade extends only a predetermined distance such that the shear blade does not extend into the path of the primary supply web.

46. The laminating device of claim 43 further comprising a holding clamp positioned adjacent the cross web shear, such that the holding clamp will brace the secondary web prior to shearing the reinforcing strip.

47. The laminating device of claim 46 wherein the holding clamp includes a holding tab movable between a feeding position and a holding position, wherein the holding tab allows the secondary web to be fed between the holding clamp and the shear blade when the holding tab is in the feeding position, and the holding tab holds the secondary web against the holding mechanism when the holding tab is in the holding position.